

WHAT IS CLAIMED IS:

1. An image display device having a display unit,
comprising:

input/output means for transferring image data input
from the image display device disposed at an upstream
location to an image display device disposed at a downstream
location;

acquisition means for acquiring resolution information
associated with the image display device disposed at the
downstream location;

generation means for generating resolution information
on the basis of the resolution information acquired by the
acquisition means and a resolution of the display unit; and

first storage means for storing the generated
resolution information for supply to the image display
device disposed at the upstream location.

2. An image display device according to claim 1,
further comprising

communication processing means for performing DDC
(Display Data Channel) communication with an external
device; and

a memory for storing EDID (Extended Display
Identification Data) information transformed in the DDC

communication,

wherein the acquisition means acquires resolution information using the communication processing means; and

the storage means stores the resolution information generated by the generation means by rewriting a corresponding item of the EDID information in the memory.

3. An image display device according to claim 1, further comprising direction detection means for detecting whether image display devices connected at downstream locations are arranged in a vertical or horizontal direction,

wherein the generation means generates the resolution information by cumulatively adding the resolution of the display unit with the resolution information acquired by the acquisition means in the direction determined by the direction detection means.

4. An image display device according to claim 1, further comprising

detection means for detecting a location of a present image display device in the multidisplay system;

determination means for determining which part of the image data should be displayed by the present display unit on the basis of the location detected by the detection means; and

display control means for displaying the part of the image data.

5. An image display device according to claim 4, wherein the display control means determines the display scaling factor on the basis of the number of pixels of the part of the image data to be displayed and on the basis of the resolution of the display unit, converts the resolution of the part of the image data in accordance with the determined display scaling factor, and displays the part of the image data on the display unit.

6. An image display device according to claim 4, wherein the detection means comprises

second storage means for acquiring chain connection information indicating the manner in which further image display devices are chain-connected at downstream locations of the image display device, generating chain connection information associated with the present image display device on the basis of the acquired chain connection information, storing the generated chain connection information such that an image display device at an upstream location can acquire the chain connection information; and

third storage means for acquiring the total number of image display devices connected at downstream locations from

the adjacent image display device at the downstream location and storing the total number of image display devices such that the image display device at the upstream location can acquire it,

wherein the detection means determines the location of the present image display device in the multidisplay system on the basis of the chain connection information and the total number of image display devices.

7. An image display device according to claim 6, further comprising direction detection means for detecting whether image display devices connected at downstream locations are arranged in the vertical or horizontal direction,

wherein the chain connection information includes information indicating the total number of image display devices chain-connected in the vertical direction and information indicating the total number of image display devices chain-connected in the horizontal direction.

8. A multidisplay system including a plurality of image display devices according to claim 1, wherein the plurality of image display devices are connected to each other and a host computer is connected to an image display device at a most upstream location.

9. An image display method using an image display device having a display unit, the image display method comprising the steps of

inputting image data from the image display device disposed at an upstream location and outputting the received image data to an image display device disposed at a downstream location;

acquiring resolution information from the image display device disposed at the downstream location;

generating resolution information on the basis of the resolution information acquired in the acquisition step and the resolution of the display unit; and

storing the generated resolution information for supply to the image display device disposed at the upstream location.

10. An image display method according to claim 9, further comprising the step of performing DDC communication with an external device, and storing EDID information obtained via the DDC communication.

11. An image display method according to claim 9, further comprising the step of detecting whether image display devices connected at downstream locations are

arranged in the vertical or horizontal direction,

wherein in the generation step, the resolution information is generated by cumulatively adding the resolution of the display unit with the resolution information acquired in the acquisition step in the direction determined in the direction detection step.

12. An image display method according to claim 9, further comprising the steps of

detecting the location of the present image display device in the multidisplay system including all image display devices;

determining which part of the image data should be displayed by the present display unit on the basis of the location detected in the detection step; and

displaying the part, determined in the determination step, of the image data received in the input/output step on the display unit.

13. An image display method according to claim 12, wherein the displaying step includes the steps of determining the display scaling factor on the basis of the number of pixels of the part of the image data to be displayed and on the basis of the resolution of the display unit, converting the resolution of the part of the image

data in accordance with the determined display scaling factor, and displaying the part of the image data on the display unit.

14. An image display method according to claim 12, wherein the detection step includes the steps of

acquiring chain connection information indicating the manner in which further image display devices are chain-connected at downstream locations of the image display device, generating chain connection information associated with the present image display device on the basis of the acquired chain connection information, and storing the generated chain connection information such that an image display device at an upstream location can acquire the chain connection information;

acquiring the total number of image display devices connected at downstream locations from the adjacent image display device at the downstream location and storing the total number of image display devices such that the image display device at the upstream location can acquire it; and

detecting the location of the present image display device in the multidisplay system on the basis of the chain connection information and the total number of image display devices.

15. An image display method according to claim 12, further comprising the step of determining whether image display devices connected at downstream locations are arranged in the vertical or horizontal direction,

wherein the chain connection information includes information indicating the total number of image display devices chain-connected in the vertical direction and information indicating the total number of image display devices chain-connected in the horizontal direction.

16. A display control apparatus for controlling an image display device having a display unit, comprising
input/output means for transferring image data input from the image display device disposed at an upstream location to an image display device disposed at a downstream location;

acquisition means for acquiring resolution information associated with the image display device disposed at the downstream location;

generation means for generating resolution information on the basis of the resolution information acquired by the acquisition means and the resolution of the display unit;
and

first storage means for storing the generated resolution information for supplying to the image display

device disposed at the upstream location.

17. A display control apparatus according to claim 16, further comprising communication processing means for performing DDC communication with an external device; and

a memory for storing EDID information transformed in the DDC communication,

wherein the acquisition means acquires resolution information using the communication processing means; and

the storage means stores the resolution information generated by the generation means by rewriting a corresponding item of the EDID information in the memory.

18. An image display method according to claim 10 further comprising the step of

in the acquisition step, using a communication processor to acquire the resolution information; and

in the storage step, storing the resolution information generated in the generation step by rewriting a corresponding item of the EDID information in the memory.